

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 18

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SHIOW-CHING LIN, STEVEN J. BURKS,
BRADLEY L. KENT and CRAIG N. KAMSLER

Appeal No. 1997-4104
Application 08/383,238

ON BRIEF

Before JOHN D. SMITH, WARREN, and TIMM, Administrative Patent Judges.

JOHN D. SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal pursuant to 35 U.S.C. § 134 from the final rejection of claims 1 through 21.

Representative claims 1 and 12 are reproduced below:

1. A paint composition comprising:

(a) from about 30 wt.% to about 70 wt.%, based upon the weight of said paint composition, of a binder component, wherein said binder component comprises at least about 35

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wt.%, based on the total weight of said binder component, of a polyvinylidene fluoride polymer having a melt viscosity of at least 40 kPoise, and from 0 wt.% to about 65 wt.%, based on the total weight of the binder component, of a polymer compatible with polyvinylidene fluoride;

(b) from about 30 wt.% to about 70 wt.%, based on the weight of said paint composition, of a solvent component; and

(c) a pigment, wherein said pigment is present in said composition at a pigment-to-binder weight ratio of from 0 to about 0.8.

12. A coated substrate, said substrate including at least one surface, wherein at least one surface of said substrate is coated with a paint including at least 35 wt.% of a polyvinylidene fluoride polymer having a melt viscosity of at least 40 kPoise.

The sole reference now relied upon by the examiner is:

Bacque et al. (Bacque)	5,095,081	Mar. 10,
1992		

The appealed claims stand rejected 35 U.S.C. § 103 as unpatentable over Bacque.

We do not sustain the stated rejection.

The subject matter on appeal is directed to a paint composition comprising, inter alia, a binder component of a polyvinylidene fluoride (PVDF) polymer having a melt viscosity of at least 40 kPoise. Appellants' composition finds particular utility as an exterior use low gloss paint. Low

gloss paints find particular utility as exterior paints for airport buildings such as airport terminals, airplane hangars, airport gates, and air freight buildings; bus terminals; railroad stations and terminals; railroad crossing signals; railroad block signals; railroad switches; bridges; residential and industrial roofing; street light and traffic light support structures. See the specification at page 6, second full paragraph.

Appellants explain in their specification at page 1 that present prior art commercial polyvinylidene fluoride-containing paints provide coatings with a 60E gloss of 30 (ASTM Designation D523-89) using a standard pigmented base formula, such as a blue base formula, after coating development. Appellants further acknowledge that a PVDF paint or coating which includes a flatting agent such as fumed silica is currently available which effects a reduced gloss, but disadvantageously provides reduced weatherability properties. Apparently, in further referring to such prior art PVDF resins, appellants report that such resins "for use in maintenance-free paints" have a melt viscosity of from

about 29 kPoise to about 33 kPoise. See the specification at page 2, third full paragraph. Appellants' invention is said to be based on the finding that when one polymerizes vinylidene fluoride such that the resulting PVDF polymer has a melt viscosity of at least 40 kPoise, and formulates a paint including

such polymer, "such paint has a reduced gloss while being easy to apply and retaining weatherability." Again, see the third full paragraph of page 2 of the specification.

As shown in figure 1 of the application, appellants demonstrate that the gloss of a PVDF coating decreases quickly with increasing melt viscosity when the melt viscosity is below 35 kPoise. The gloss reduction rate decreases when the melt viscosity exceeds 35 kPoise. As reported in the specification at the bottom of page 9, if low gloss at 60E is defined arbitrarily to be 15 or lower, the melt viscosity of the PVDF resin should be at least 48 kPoise. To obtain a PVDF paint having a gloss of 10 or lower, the resin should have a

melt viscosity of at least 54 kPoise. Thus, by defining their PVDF polymer component as having a melt viscosity of at least 40 kPoise, appellants have inherently defined the composition as a low gloss paint.

In finding the herein claimed invention obvious over the teachings of Bacque, the examiner states in his answer at pages 4 and 5 that this prior art reference relates to a process for manufacturing vinylidene fluoride polymers and to the use of these polymers in paints. A typical paint formulation disclosed in the prior art Bacque reference at column 4, lines 1-10 is comprised of a PVDF polymer, an acrylic resin, a pigment, a solvent and an anionic surfactant. The examiner further asserts that the disclosed amounts of resin, pigment and solvents encompass those that are instantly claimed and the examiner contends that it would have been obvious to one of ordinary skill in this art to simply follow the teachings of Bacque to arrive at the claimed invention. The examiner further points out that since the claims on appeal do not expressly specify a gloss value, it is immaterial that Bacque's primary purpose is to produce a paint

having a high gloss.

With respect to the key limitation in appellants' claims requiring the specified high melt viscosity for the PVDF polymer component of appellants' paints, the examiner states that appellants have not established the criticality of that limitation regarding melt viscosity. The examiner further states that he assumes that the composition of Bacque satisfies the limitation of melt viscosity because it has not been disproved by appellants. Further, the examiner's assumption above is apparently based on his "feeling" that example 4 (a control example of Bacque which appears at column 4, line 58), possesses a melt viscosity corresponding to the claimed melt viscosity because this example is said to provide a low-gloss paint. This example, however, reports a 60E gloss value of 48, a value substantially higher than the low-gloss values produced by appellants' paints which have been arbitrarily defined to be 15 or lower. Based on appellants' Figure 1 graph, the example 4 paint of Bacque having a gloss value at 60E of 48 would appear to have a melt viscosity of less than 30 kPoise. In short, this example would appear to

be representative of what appellants have referred to as prior art or current PVDF resins used in maintenance-free paints which have a melt viscosity from about 29 kPoise to about 33 kPoise. Again, see the specification at page 2, third full paragraph.

With respect to the examiner's contention that the manner in which Bacque's example 4 PVDF polymer is made is similar to the way appellants' PVDF polymer is made, we note the following. Based on the disclosures in Bacque at column 1, line 23 through line 60, it is apparent that Bacque's example 4 is made by a prior art process of polymerizing vinylidene fluoride monomer in an aqueous medium in the absence of an emulsifying agent, and with the use of peroxydisulphates as initiators, and in the absence of chain control agents. On the other hand, as evident from appellants' specification at pages 4 and 5, appellants form the herein claimed polyvinylidene fluoride polymers by an emulsion polymerization process which employs a fluorosurfactant, i.e., an emulsifier, with an initiator such as di-t-butyl peroxide. Accordingly, there are substantial differences between the way appellants

form their desired high melt viscosity PVDF resin component and the manner in which the example 4 PVDF resin component of the prior art is formed.

Finally, the examiner argues that the prior art reference to Bacque "seems to associate" high molecular weight "i.e., high melt viscosity" with low gloss with respect to a PVDF polymer component in a paint. Accordingly, the examiner argues that once this relationship is known, it is a matter of optimization to one of ordinary skill in the art to obtain a polymer having appellants' claimed melt viscosity "coupled with a desired gloss." It is our view, however, that the examiner has failed to meet his burden of demonstrating that the low-gloss paints referred to in the Bacque reference at column 1, lines 23 through 41, are equivalent to the low-gloss paints described in appellants' specification. As we have pointed out above, example 4 of Bacque which is apparently made by the process disclosed at column 1, lines 23 through 41 has a reported gloss at 60E of 48 percent. Again, this is a value substantially higher than the gloss values produced by appellants' paints. Under the circumstances of this case, we

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find that the examiner has provided an inadequate factual basis to support a reasonable belief that the claimed melt viscosity value for appellants' PVDF resin component in appellants' paints is an inherent characteristic of the prior art paints. Compare In re Best, 562 F.2d 1252, 1555, 195 USPQ 430, 433 (CCPA 1977). Accordingly, the examiner's stated rejection of the appealed claims cannot be sustained.

The decision of the examiner is reversed.

REVERSED

JOHN D. SMITH)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
CHARLES F. WARREN)	
Administrative Patent Judge)	APPEALS AND
)	
)	INTERFERENCES
)	
CATHERINE TIMM)	
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